



RF360
Europe GmbH

SAW components

SAW duplexer

Small cell & femtocell
LTE band 1

| | |
|----------------|-----------------|
| Series/type: | B8092 |
| Ordering code: | B39212B8092P810 |
| Date: | April 11, 2018 |
| Version: | 2.4 |

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A Qualcomm – TDK Joint Venture

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Data sheet

Table of contents

| | | |
|----|---|----|
| 1 | Application | 4 |
| 2 | Features | 4 |
| 3 | Package | 5 |
| 4 | Pin configuration | 5 |
| 5 | Matching circuit | 6 |
| 6 | Characteristics | 7 |
| 7 | Maximum ratings | 13 |
| 8 | Transmission coefficients | 14 |
| 9 | Reflection coefficients | 17 |
| 10 | EVMS | 18 |
| 11 | Packing material | 20 |
| 12 | Marking | 24 |
| 13 | Soldering profile | 25 |
| 14 | Annotations | 26 |
| 15 | Cautions and warnings | 27 |
| | Important notes | 28 |

Data sheet

1 Application

- Low-loss SAW duplexer for 3G/LTE small cell & femtocell systems (Band 1)
- Usable pass band 60 MHz
- DECT Europe rejection
- Rx = uplink = 1920 – 1980 MHz
- Tx = downlink = 2110 – 2170 MHz

2 Features

- Industrial grade qualified family
- Package size 2.5 ± 0.1 mm \times 2.0 ± 0.1 mm
- Package height 0.5 mm (max.)
- Approximate weight 0.01 g
- RoHS compatible
- Package for Surface Mount Technology (SMT)
- Ni/Au-plated terminals
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level 2a (MSL2a)

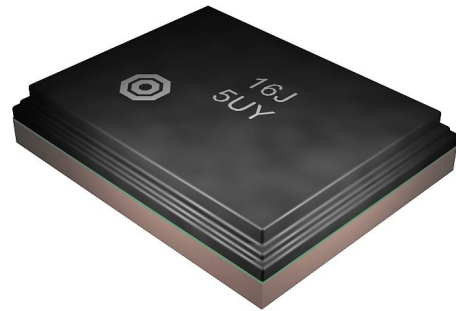


Figure 1: Picture of component with example of product marking.

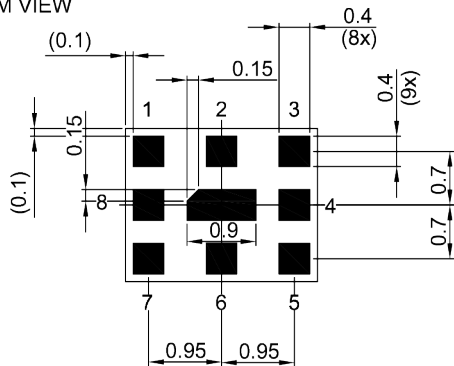
SAW components **B8092**

SAW duplexer **1950 / 2140 MHz**

Data sheet

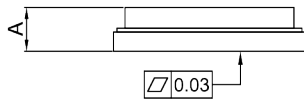
3 Package

BOTTOM VIEW

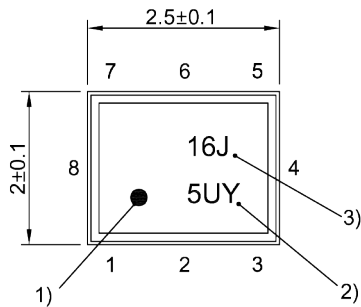


Pad and pitch tolerance ±0.05

SIDE VIEW

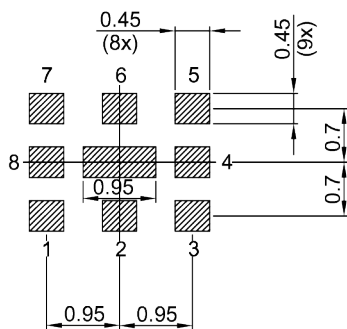


TOP VIEW



- 1) Marking for pad number 1
- 2) Example of encoded lot number
- 3) Example of encoded filter type number

Land pattern THRU VIEW



Landing pad tolerance -0.02

Figure 2: Drawing of package with package height A = 0.5 mm (max.). See Sec. Package information (p. 27).

4 Pin configuration

- 1 TX
- 3 RX
- 6 ANT
- 2, 4, 5, 7, 8, 9 Ground

Data sheet

5 Matching circuit

- $L_{p6} = 2.2 \text{ nH}$

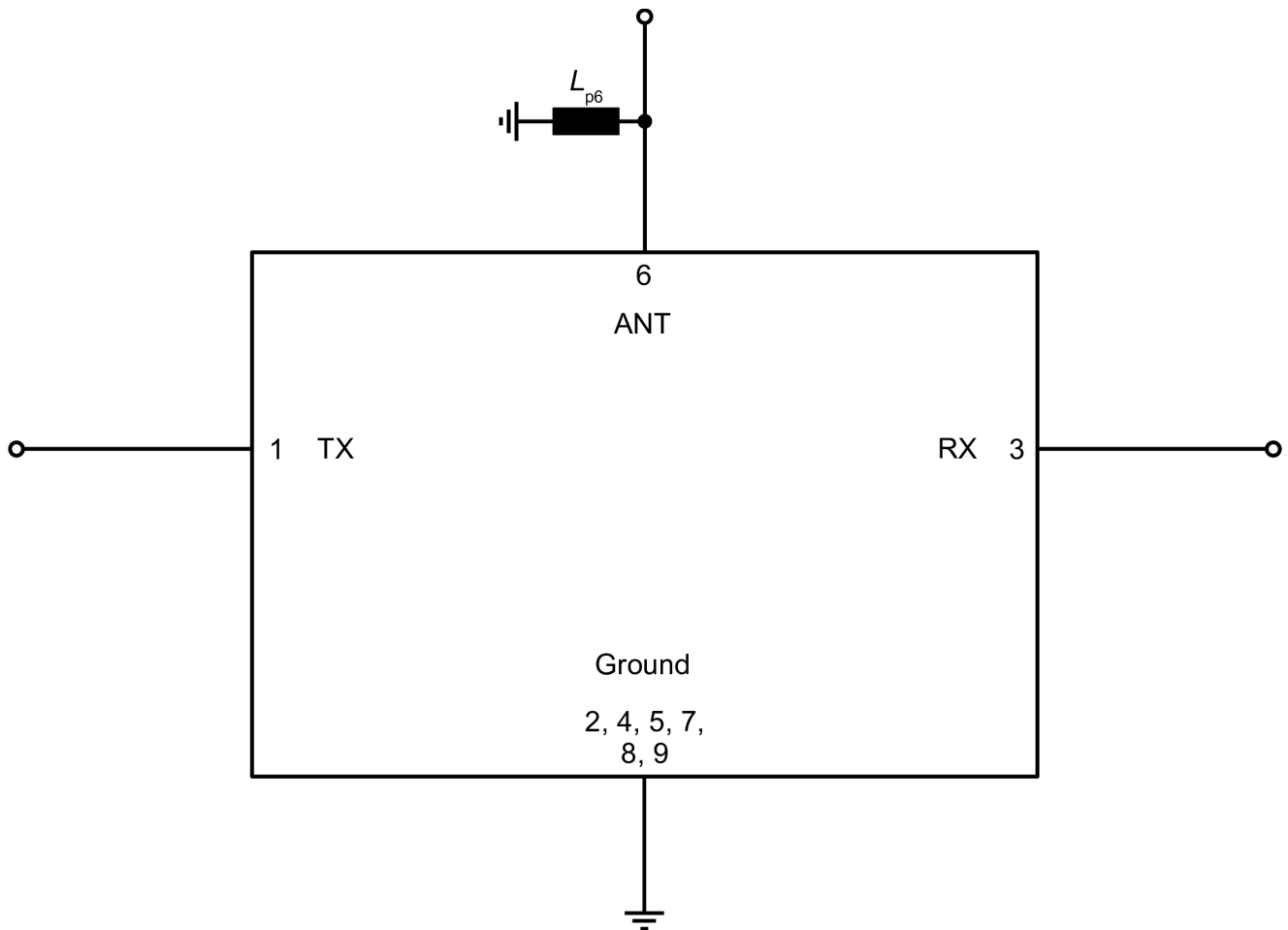


Figure 3: Schematic of matching circuit.

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SAW duplexer

1950 / 2140 MHz

Data sheet

6 Characteristics

6.1 TX – ANT

| | | |
|-------------------------------------|------------|--|
| Temperature range for specification | T_{SPEC} | = -10 °C ... +85 °C |
| TX terminating impedance | Z_{TX} | = 50 Ω |
| ANT terminating impedance | Z_{ANT} | = 50 Ω with par. 2.2 nH ¹⁾ |
| RX terminating impedance | Z_{RX} | = 50 Ω |

| Characteristics TX – ANT | | | | min. for T_{SPEC} | typ. @ +25 °C | max. for T_{SPEC} | |
|---------------------------------------|------------------|-----|----------------------------------|------------------------|------------------|------------------------|-----|
| Center frequency | | | f_C | — | 2140 | — | MHz |
| Maximum insertion attenuation | 2110... 2170 | MHz | α_{max} | — | 2.0 | 2.5 | dB |
| Amplitude ripple (p-p) | 2110... 2170 | MHz | $\Delta\alpha$ | — | 0.8 | 1.6 | dB |
| Maximum VSWR | | | VSWR _{max} | | | | |
| @ TX port | 2110... 2170 | MHz | | — | 1.7 | 2.0 | |
| @ ANT port | 2110... 2170 | MHz | | — | 1.5 | 2.0 | |
| Maximum error vector magnitude | 2112.5... 2167.5 | MHz | EVM _{max} ²⁾ | — | 0.5 | 1.5 | % |
| Minimum attenuation | | | α_{min} | | | | |
| | 10... 1574 | MHz | | 30 | 34 | — | dB |
| | 843... 894 | MHz | | 30 | 40 | — | dB |
| | 1574... 1606 | MHz | | 30 | 34 | — | dB |
| | 1606... 1880 | MHz | | 30 | 34 | — | dB |
| | 1805... 1880 | MHz | | 30 | 40 | — | dB |
| | 1920... 1980 | MHz | | 37 | 43 | — | dB |
| | 2250... 2400 | MHz | | 30 | 48 | — | dB |
| | 2400... 2500 | MHz | | 30 | 48 | — | dB |
| | 2500... 2700 | MHz | | 30 | 37 | — | dB |
| | 2620... 2690 | MHz | | 30 | 42 | — | dB |
| | 2700... 3000 | MHz | | 30 | 37 | — | dB |
| | 3000... 3800 | MHz | | 28 | 32 | — | dB |
| | 3800... 4220 | MHz | | 15 | 20 | — | dB |
| | 4220... 4340 | MHz | | 10 | 15 | — | dB |
| | 4340... 5000 | MHz | | 7 | 18 | — | dB |
| | 5000... 6000 | MHz | | 3 | 7 | — | dB |

¹⁾ See Sec. Matching circuit (p. 6).

²⁾ Error Vector Magnitude (EVM) based on definition in 3GPP TS 25.141.

SAW components

B8092

SAW duplexer

1950 / 2140 MHz

Data sheet

| | | |
|-------------------------------------|------------|--|
| Temperature range for specification | T_{SPEC} | = -40 °C ... +95 °C |
| TX terminating impedance | Z_{TX} | = 50 Ω |
| ANT terminating impedance | Z_{ANT} | = 50 Ω with par. 2.2 nH ¹⁾ |
| RX terminating impedance | Z_{RX} | = 50 Ω |

| Characteristics TX – ANT | | | min. for T_{SPEC} | typ. @ +25 °C | max. for T_{SPEC} | |
|--------------------------------------|--------------|-------|------------------------|------------------|------------------------|-----|
| Center frequency | | f_C | — | 2140 | — | MHz |
| Maximum insertion attenuation | 2110... 2170 | MHz | α_{max} | 2.0 | 3.0 | dB |
| Amplitude ripple (p-p) | 2110... 2170 | MHz | $\Delta\alpha$ | 0.8 | 1.9 | dB |
| Maximum VSWR | | | VSWR _{max} | | | |
| @ TX port | 2110... 2170 | MHz | | 1.7 | 2.2 | |
| @ ANT port | 2110... 2170 | MHz | | 1.5 | 2.2 | |
| Minimum attenuation | | | α_{min} | | | |
| | 10... 1574 | MHz | | 30 | 34 | dB |
| | 843... 894 | MHz | | 30 | 40 | dB |
| | 1574... 1606 | MHz | | 30 | 34 | dB |
| | 1606... 1880 | MHz | | 30 | 34 | dB |
| | 1805... 1880 | MHz | | 30 | 40 | dB |
| | 1920... 1980 | MHz | | 37 | 43 | dB |
| | 2250... 2400 | MHz | | 30 | 48 | dB |
| | 2400... 2500 | MHz | | 30 | 48 | dB |
| | 2500... 2700 | MHz | | 30 | 37 | dB |
| | 2620... 2690 | MHz | | 30 | 42 | dB |
| | 2700... 3000 | MHz | | 30 | 37 | dB |
| | 3000... 3800 | MHz | | 28 | 32 | dB |
| | 3800... 4220 | MHz | | 15 | 20 | dB |
| | 4220... 4340 | MHz | | 10 | 15 | dB |
| | 4340... 5000 | MHz | | 7 | 18 | dB |
| | 5000... 6000 | MHz | | 3 | 7 | dB |

¹⁾ See Sec. Matching circuit (p. 6).

SAW components

B8092

SAW duplexer

1950 / 2140 MHz

Data sheet

6.2 ANT – RX

| | | |
|-------------------------------------|------------|--|
| Temperature range for specification | T_{SPEC} | = -10 °C ... +85 °C |
| TX terminating impedance | Z_{TX} | = 50 Ω |
| ANT terminating impedance | Z_{ANT} | = 50 Ω with par. 2.2 nH ¹⁾ |
| RX terminating impedance | Z_{RX} | = 50 Ω |

| Characteristics ANT – RX | | | | min. for T_{SPEC} | typ. @ +25 °C | max. for T_{SPEC} | |
|---------------------------------------|------------------|-----|------------------|------------------------|------------------|------------------------|-----|
| Center frequency | | | f_C | — | 1950 | — | MHz |
| Maximum insertion attenuation | 1920... 1980 | MHz | α_{max} | — | 2.3 | 3.7 | dB |
| Amplitude ripple (p-p) | 1920... 1980 | MHz | $\Delta\alpha$ | — | 0.9 | 2.2 | dB |
| Maximum VSWR | | | $VSWR_{max}$ | | | | |
| @ ANT port | 1920... 1980 | MHz | | — | 1.9 | 2.2 | |
| @ RX port | 1920... 1980 | MHz | | — | 2.0 | 2.3 | |
| Maximum error vector magnitude | 1922.5... 1977.5 | MHz | $EVM_{max}^{2)}$ | — | 1.5 | 3.0 | % |
| Minimum attenuation | | | α_{min} | | | | |
| | 10... 1785 | MHz | | 30 | 36 | — | dB |
| | 1785... 1880 | MHz | | 20 | 31 | — | dB |
| | 1880... 1900 | MHz | | 5 | 15 | — | dB |
| | 2000... 2110 | MHz | | 2.5 | 12 | — | dB |
| | 2110... 2170 | MHz | | 43 | 48 | — | dB |
| | 2255... 2400 | MHz | | 30 | 33 | — | dB |
| | 2400... 2500 | MHz | | 25 | 30 | — | dB |
| | 2500... 3840 | MHz | | 15 | 20 | — | dB |
| | 3840... 3960 | MHz | | 20 | 24 | — | dB |
| | 3960... 5000 | MHz | | 20 | 25 | — | dB |
| | 5000... 5760 | MHz | | 15 | 30 | — | dB |
| | 5760... 5940 | MHz | | 15 | 30 | — | dB |

¹⁾ See Sec. Matching circuit (p. 6).

²⁾ Error Vector Magnitude (EVM) based on definition in 3GPP TS 25.141.

SAW components

B8092

SAW duplexer

1950 / 2140 MHz

Data sheet

| | | |
|-------------------------------------|------------|--|
| Temperature range for specification | T_{SPEC} | = -40 °C ... +95 °C |
| TX terminating impedance | Z_{TX} | = 50 Ω |
| ANT terminating impedance | Z_{ANT} | = 50 Ω with par. 2.2 nH ¹⁾ |
| RX terminating impedance | Z_{RX} | = 50 Ω |

| Characteristics ANT – RX | | | min. for T_{SPEC} | typ. @ +25 °C | max. for T_{SPEC} | |
|---------------------------------------|------------------|----------------------------------|------------------------|------------------|------------------------|----|
| Maximum insertion attenuation | | α_{max} | | | | |
| | 1920... 1980 | MHz | — | 2.3 | 5.2 | dB |
| Amplitude ripple (p-p) | | $\Delta\alpha$ | | | | |
| | 1920... 1980 | MHz | — | 0.9 | 3.7 | dB |
| Maximum VSWR | | VSWR _{max} | | | | |
| @ ANT port | 1920... 1980 | MHz | — | 1.9 | 2.3 | |
| @ RX port | 1920... 1980 | MHz | — | 2.0 | 2.3 | |
| Maximum error vector magnitude | | EVM _{max} ²⁾ | | | | |
| | 1922.5... 1977.5 | MHz | — | 1.5 | 6.0 | % |
| Minimum attenuation | | α_{min} | | | | |
| | 10... 1785 | MHz | 30 | 36 | — | dB |
| | 1785... 1880 | MHz | 20 | 31 | — | dB |
| | 1880... 1900 | MHz | 3 | 15 | — | dB |
| | 2000... 2110 | MHz | 2 | 12 | — | dB |
| | 2110... 2170 | MHz | 43 | 48 | — | dB |
| | 2255... 2400 | MHz | 30 | 33 | — | dB |
| | 2400... 2500 | MHz | 25 | 30 | — | dB |
| | 2500... 3840 | MHz | 15 | 20 | — | dB |
| | 3840... 3960 | MHz | 20 | 24 | — | dB |
| | 3960... 5000 | MHz | 20 | 25 | — | dB |
| | 5000... 5760 | MHz | 15 | 30 | — | dB |
| | 5760... 5940 | MHz | 15 | 30 | — | dB |

¹⁾ See Sec. Matching circuit (p. 6).

²⁾ Error Vector Magnitude (EVM) based on definition in 3GPP TS 25.141.

SAW components

B8092

SAW duplexer

1950 / 2140 MHz

Data sheet

6.3 TX – RX

| | | |
|-------------------------------------|------------|--|
| Temperature range for specification | T_{SPEC} | = -10 °C ... +85 °C |
| TX terminating impedance | Z_{TX} | = 50 Ω |
| ANT terminating impedance | Z_{ANT} | = 50 Ω with par. 2.2 nH ¹⁾ |
| RX terminating impedance | Z_{RX} | = 50 Ω |

| Characteristics TX – RX | | | | min. for T_{SPEC} | typ. @ +25 °C | max. for T_{SPEC} | |
|--------------------------|----------------------------------|--------------|-----|------------------------|------------------|------------------------|----|
| Average isolation | $\alpha_{INT,avg}$ ²⁾ | 1920... 1960 | MHz | 45 | 48 | — | dB |
| | | 1960... 1980 | MHz | 42 | 48 | — | dB |
| | | 2110... 2155 | MHz | 50 | 52 | — | dB |
| | | 2155... 2170 | MHz | 48 | 52 | — | dB |
| Minimum isolation | α_{min} | 1920... 1980 | MHz | 42 | 48 | — | dB |
| | | 2110... 2170 | MHz | 47 | 52 | — | dB |

¹⁾ See Sec. Matching circuit (p. 6).

²⁾ Integrated attenuation α_{INT} : Averaged power $|S_{ij}|^2$ over the center 4.5 MHz of LTE 5 MHz (25 RB) channels.

SAW components

B8092

SAW duplexer

1950 / 2140 MHz

Data sheet

| | | |
|-------------------------------------|------------|--|
| Temperature range for specification | T_{SPEC} | = -40 °C ... +95 °C |
| TX terminating impedance | Z_{TX} | = 50 Ω |
| ANT terminating impedance | Z_{ANT} | = 50 Ω with par. 2.2 nH ¹⁾ |
| RX terminating impedance | Z_{RX} | = 50 Ω |

| Characteristics TX – RX | | | min. for T_{SPEC} | typ. @ +25 °C | max. for T_{SPEC} | | |
|--------------------------|--|----------------------------------|------------------------|------------------|------------------------|---|----|
| Average isolation | | $\alpha_{INT,avg}$ ²⁾ | 1920... 1960 MHz | 45 | 48 | — | dB |
| | | | 1960... 1980 MHz | 42 | 48 | — | dB |
| | | | 2110... 2155 MHz | 50 | 52 | — | dB |
| | | | 2155... 2170 MHz | 48 | 52 | — | dB |
| Minimum isolation | | α_{min} | 1920... 1980 MHz | 42 | 48 | — | dB |
| | | | 2110... 2170 MHz | 47 | 52 | — | dB |

¹⁾ See Sec. Matching circuit (p. 6).

²⁾ Integrated attenuation α_{INT} : Averaged power $|S_{ij}|^2$ over the center 4.5 MHz of LTE 5 MHz (25 RB) channels.

SAW components

B8092

SAW duplexer

1950 / 2140 MHz

Data sheet

7 Maximum ratings

| | | |
|---|--|--|
| Operable temperature | $T_{OP} = -40\text{ °C} \dots +95\text{ °C}$ | |
| Storage temperature | $T_{STG}^{1)} = -40\text{ °C} \dots +95\text{ °C}$ | |
| DC voltage | $ V_{DC} ^{2)} = 0\text{ V}$ | |
| ESD voltage | | |
| | $V_{ESD}^{3)} = 50\text{ V}$ | Machine model. |
| | $V_{ESD}^{4)} = 100\text{ V}$ | Human body model. |
| Input power | P_{IN} | |
| @ TX port: 2110 ... 2170 MHz | 28 dBm ^{5), 6)} | 5 MHz LTE downlink signal (25 RB) for 100000 h @ 55 °C. P_{IN} average – 39 dBm peak. Source and load impedance 50Ω. |
| @ TX port: other frequency ranges | 10 dBm | Source and load impedance 50Ω. |
| Operating lifetime with output power at antenna 2110 ... 2170 MHz | $P_{OUT}^{7)} = 24\text{ dBm}$ | Continuous wave for 100000 h @ 55 °C. Source and load impedance 50Ω. |

¹⁾ Not valid for packaging material. Storage temperature for packaging material is -25 °C to +40 °C.

²⁾ In case of applied DC voltage blocking capacitors are mandatory.

³⁾ According to JESD22-A115B (MM – Machine Model), 10 negative & 10 positive pulses.

⁴⁾ According to JESD22-A114F (HBM – Human Body Model), 1 negative & 1 positive pulse.

⁵⁾ Expected lifetime according to accelerated power durability tests, and wear out models.

⁶⁾ T_{SPEC} is the ambient temperature of the PCB at component position. Specified min./max values from section 6 "characteristics" for maximum input power 28dBm are valid for temperature up to 57°C.

⁷⁾ According to accelerated high temperature operating life (HTOL) test.

Data sheet

8 Transmission coefficients

8.1 TX – ANT

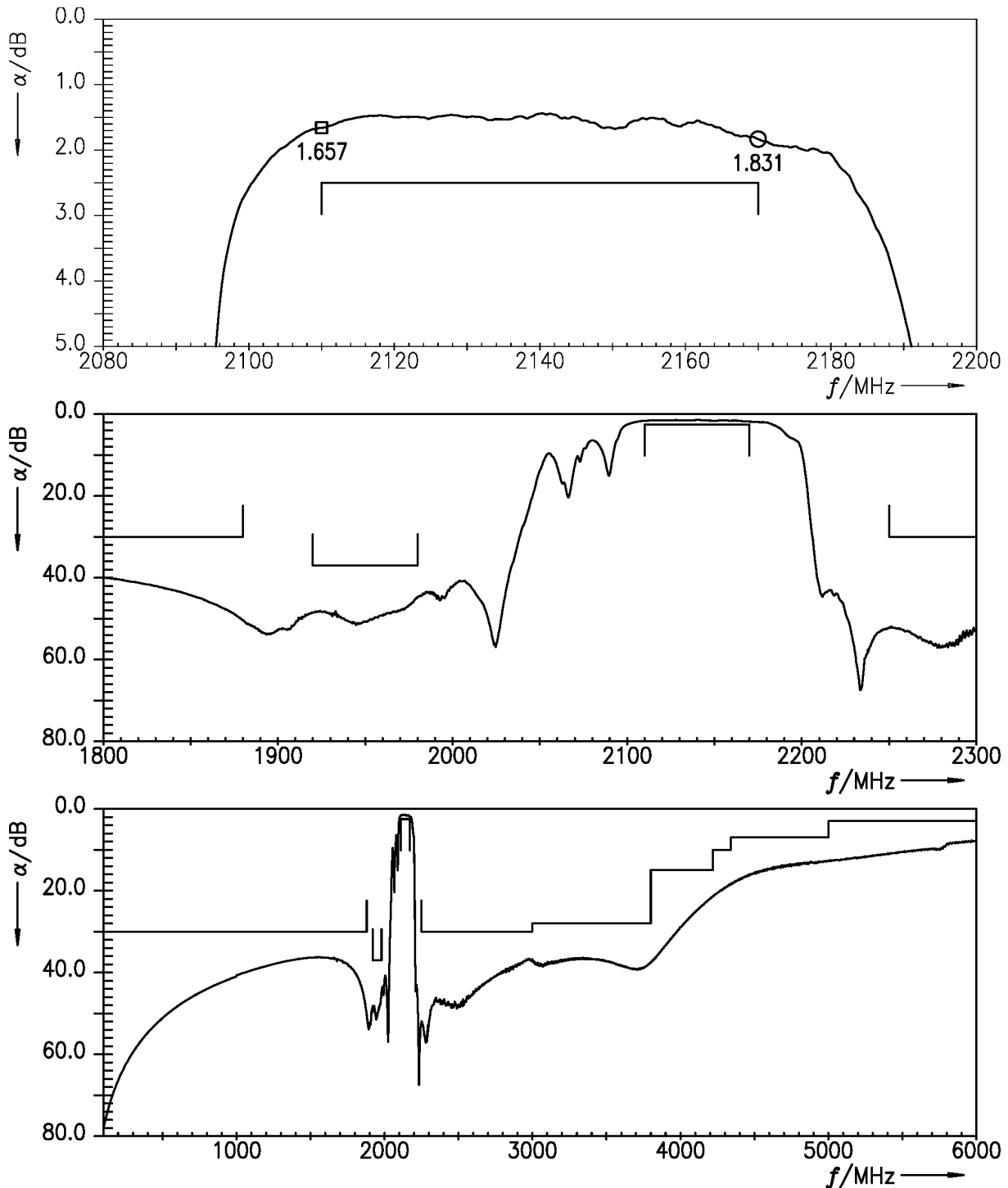


Figure 4: Attenuation TX – ANT.

Data sheet

8.2 ANT – RX

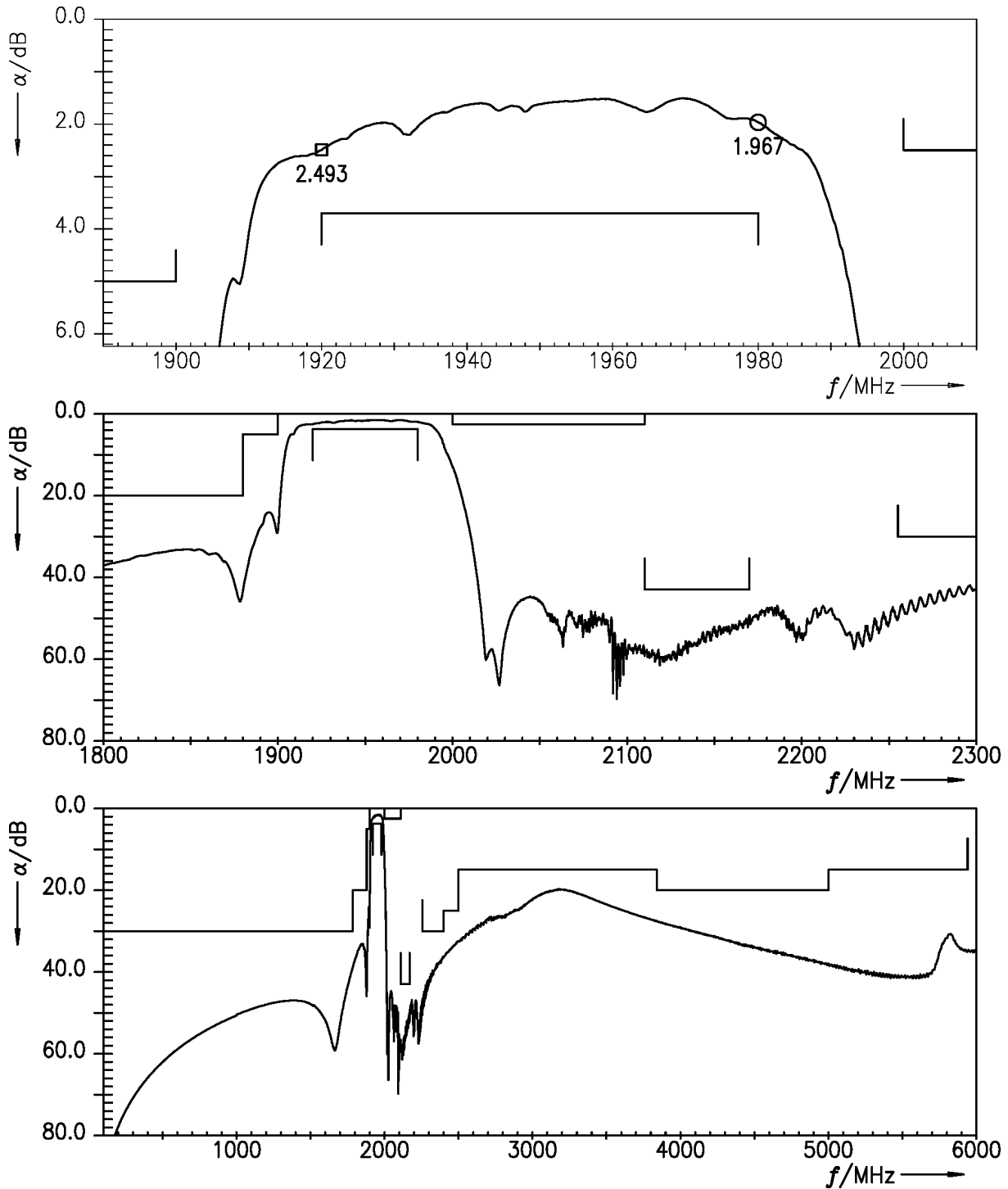


Figure 5: Attenuation ANT – RX.

Data sheet

8.3 TX – RX

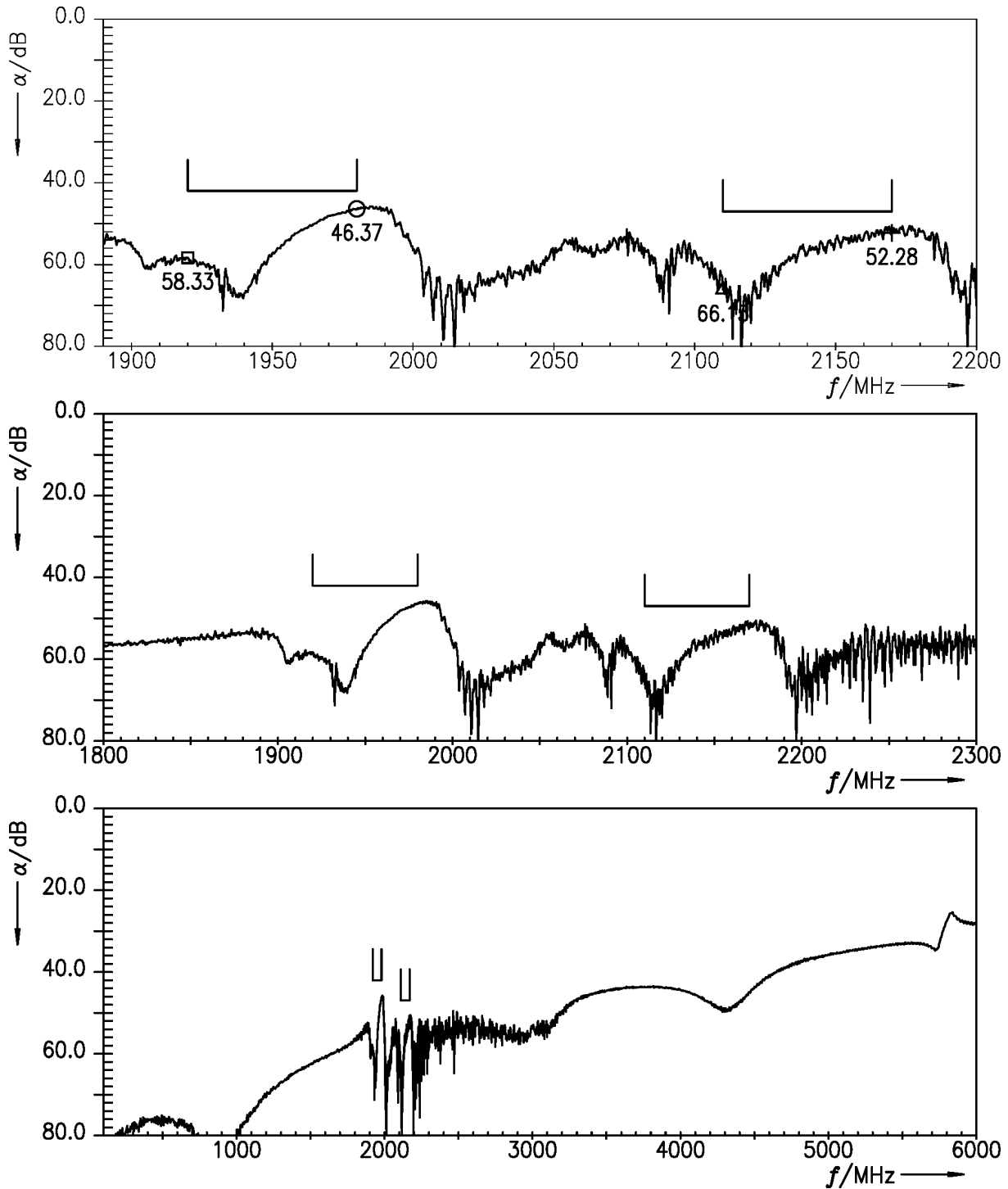


Figure 6: Isolation TX – RX.

Data sheet

9 Reflection coefficients

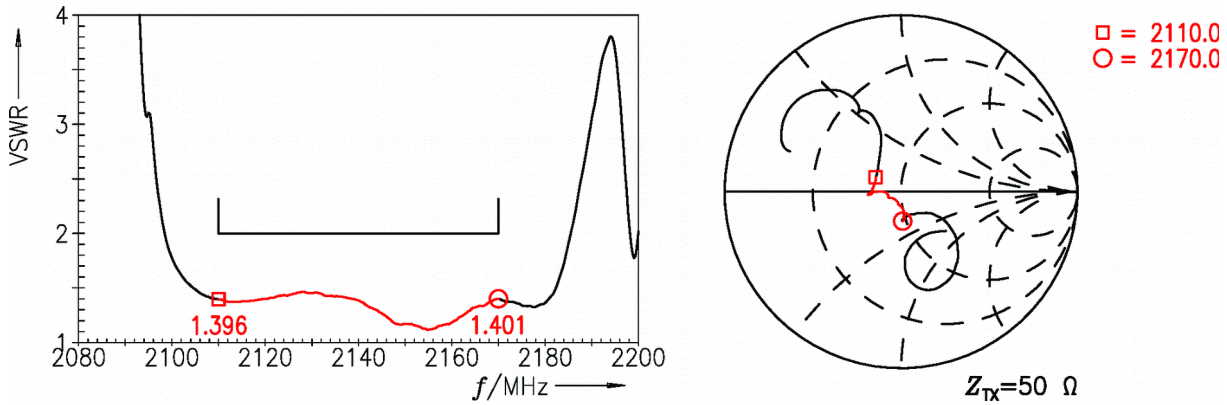


Figure 7: Reflection coefficient at TX port.

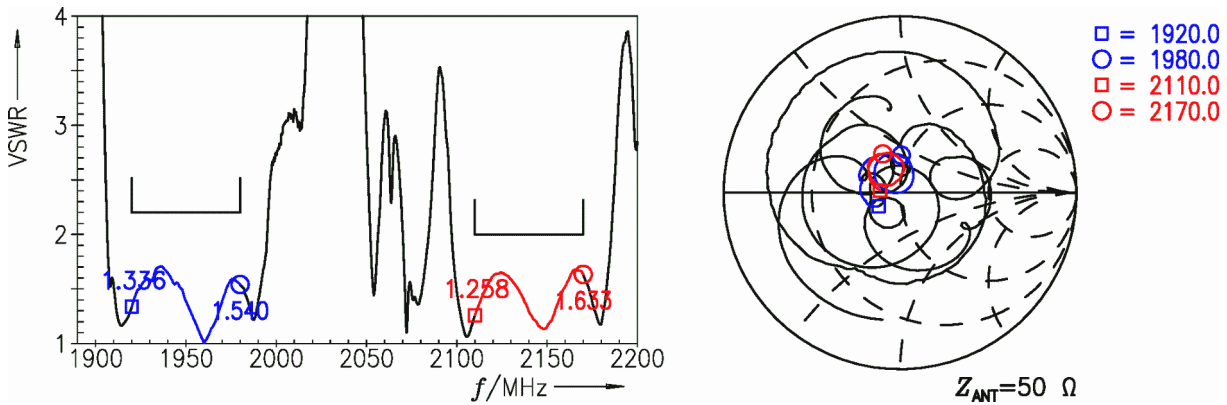


Figure 8: Reflection coefficient at ANT port.

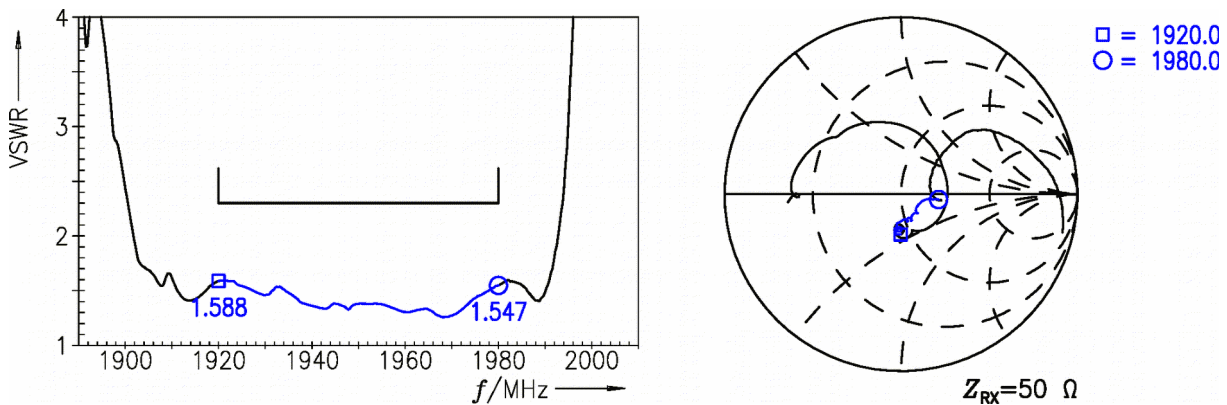
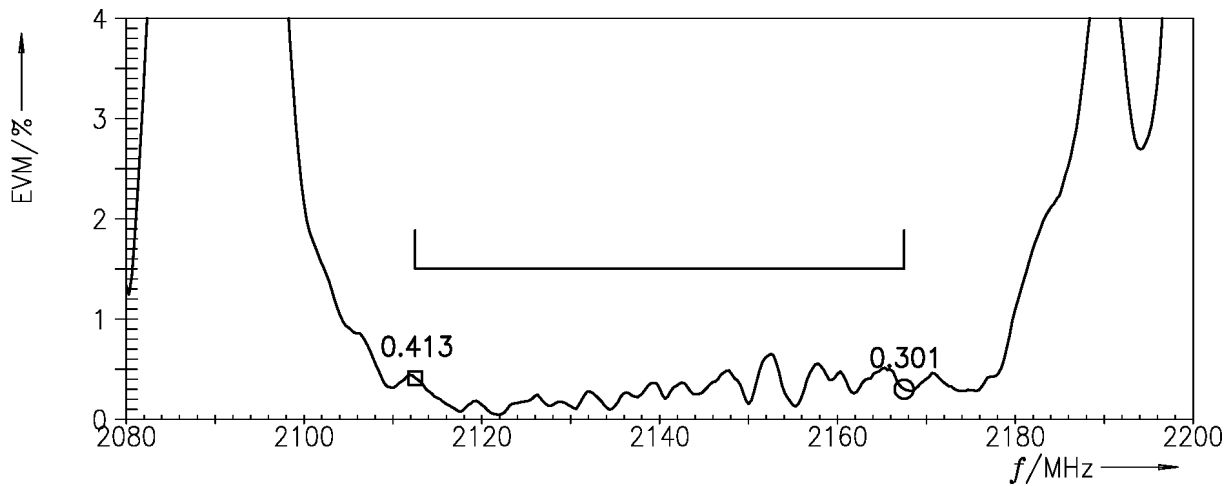


Figure 9: Reflection coefficient at RX port.

Data sheet

10 EVMs**10.1 TX – ANT****Figure 10:** Error vector magnitude TX – ANT.

Data sheet

10.2 ANT – RX

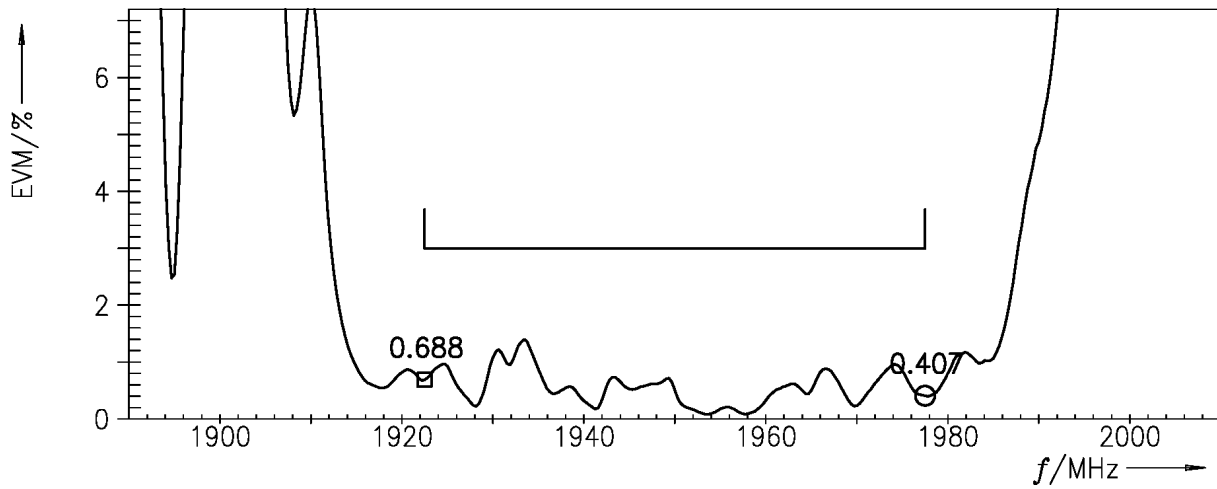


Figure 11: Error vector magnitude ANT – RX.

Data sheet

11 Packing material

11.1 Tape

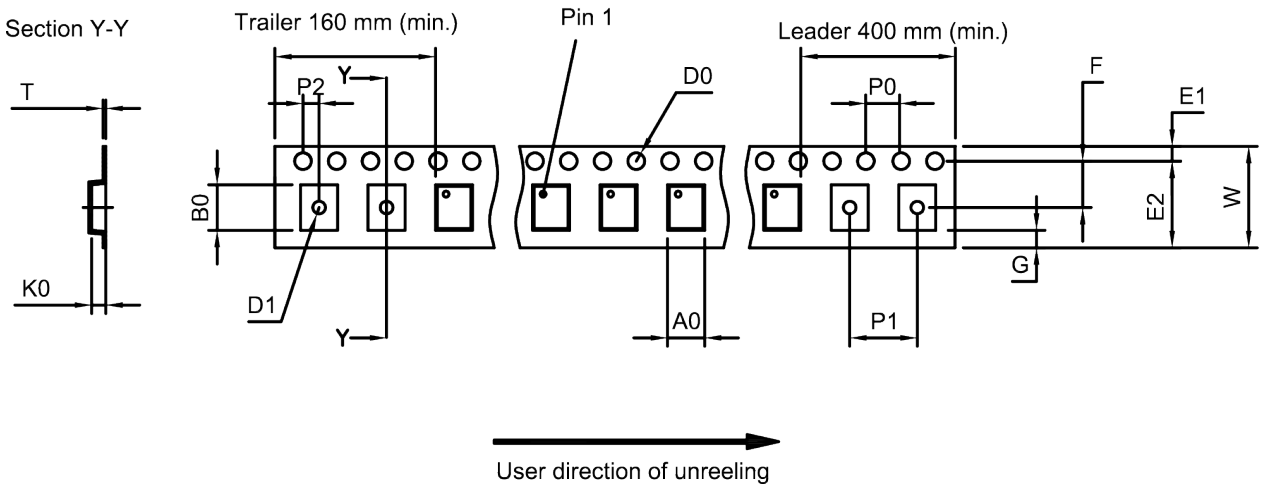


Figure 12: Drawing of tape (first-angle projection) with tape dimensions according to Table 1.

| | | |
|------------------------------|-------------------------------|----------------------------|
| A ₀ 2.25±0.05 mm | E ₂ 6.25 mm (min.) | P ₁ 4.0±0.1 mm |
| B ₀ 2.75±0.05 mm | F 3.5±0.05 mm | P ₂ 2.0±0.05 mm |
| D ₀ 1.5+0.1/-0 mm | G 0.75 mm (min.) | T 0.25±0.03 mm |
| D ₁ 1.0 mm (min.) | K ₀ 0.6±0.05 mm | W 8.0+0.3/-0.1 mm |
| E ₁ 1.75±0.1 mm | P ₀ 4.0±0.1 mm | |

Table 1: Tape dimensions.

| | |
|----------------|-----------------|
| SAW components | B8092 |
| SAW duplexer | 1950 / 2140 MHz |

Data sheet

11.2 Reel with diameter of 180 mm

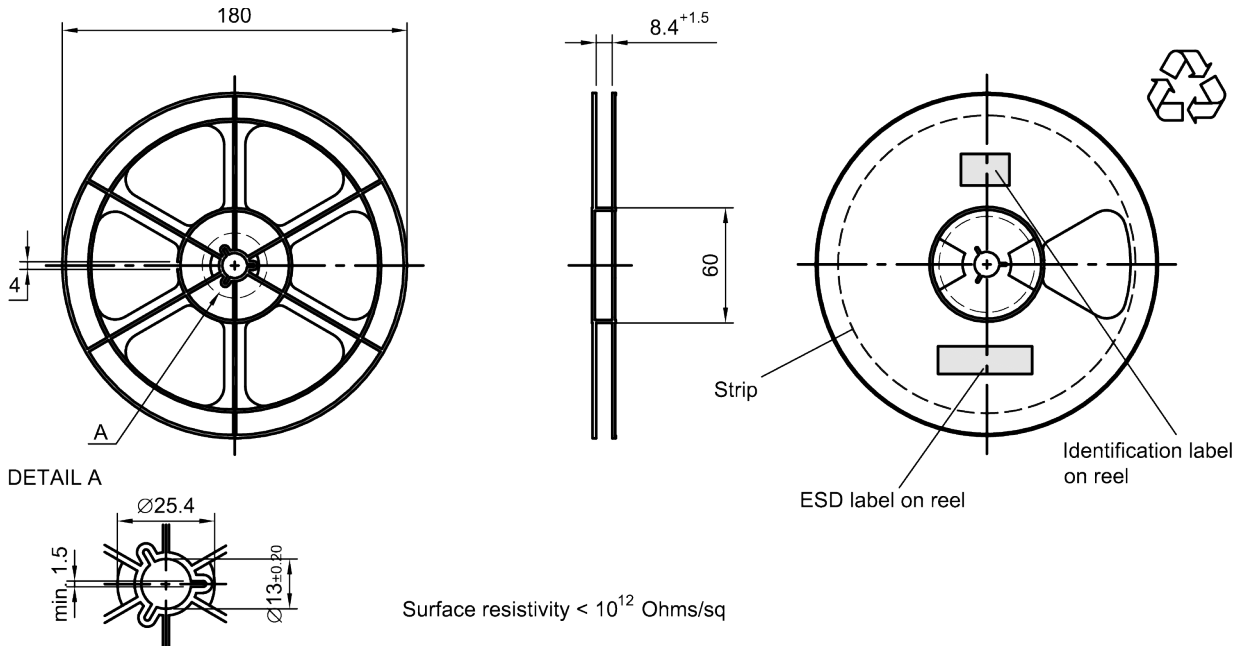


Figure 13: Drawing of reel (first-angle projection) with diameter of 180 mm.

Dimensions [mm]

X = 220+5

Y = 235+5

Sealing area 10±3

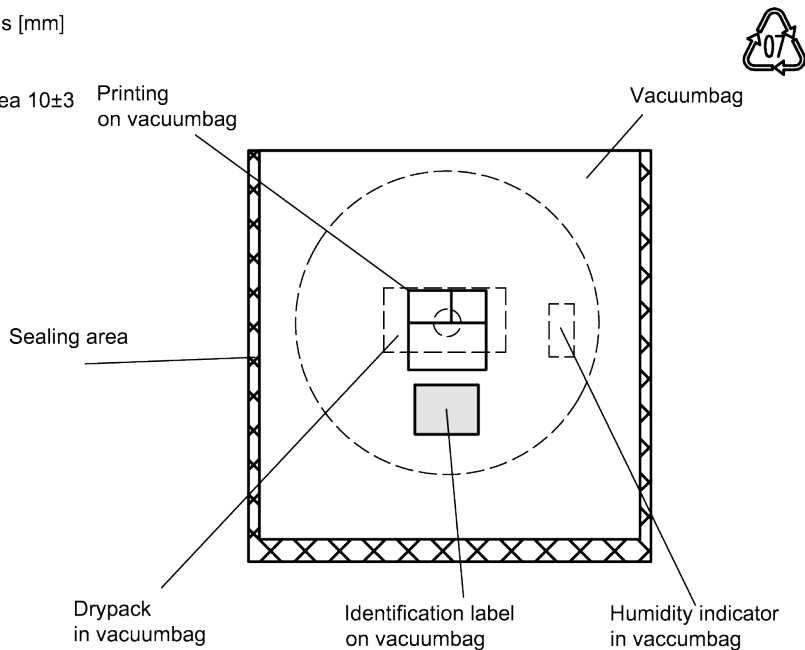


Figure 14: Drawing of moisture barrier bag (MBB) for reel with diameter of 180 mm.

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SAW duplexer **1950 / 2140 MHz**

Data sheet

Dimensions [mm]
 L = 188
 B = 188
 H = 30
 Tolerance ±5

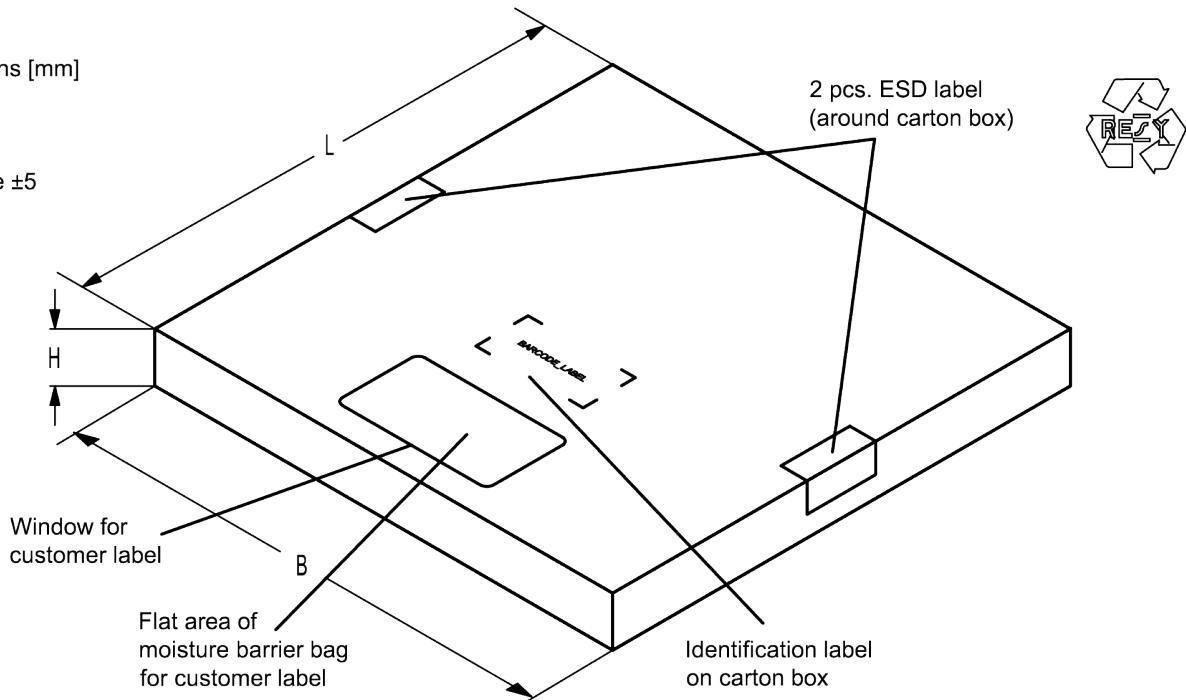


Figure 15: Drawing of folding box for reel with diameter of 180 mm.

11.3 Reel with diameter of 330 mm

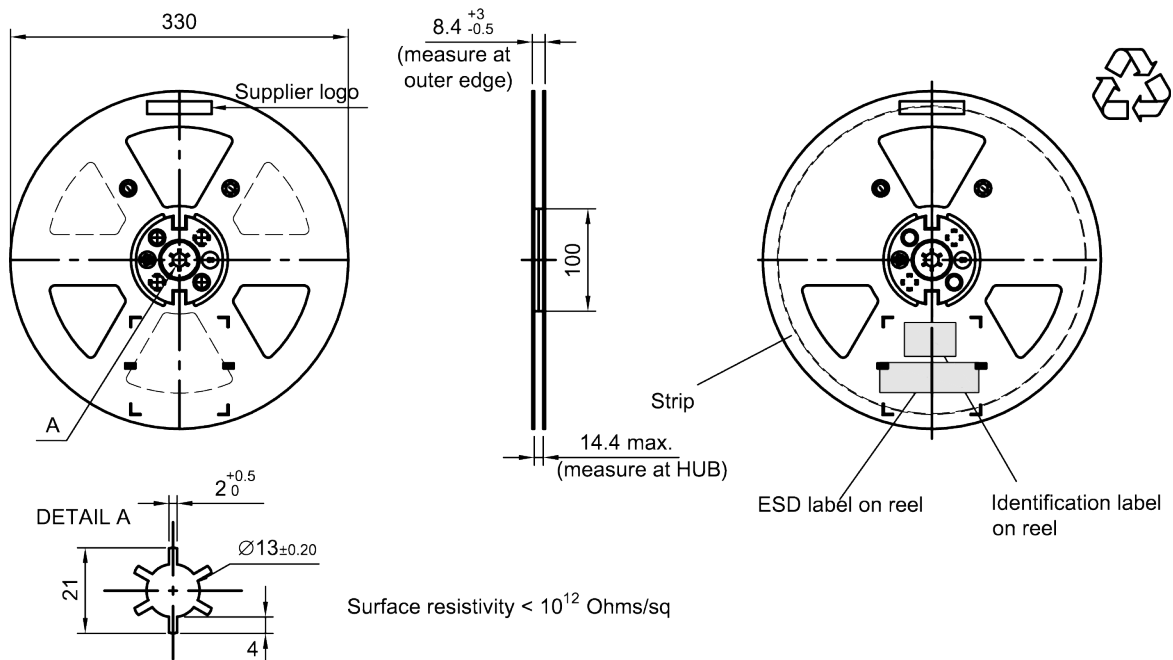


Figure 16: Drawing of reel (first-angle projection) with diameter of 330 mm.

SAW components **B8092**
SAW duplexer **1950 / 2140 MHz**

Data sheet

Dimensions [mm]
 X = 400+5
 Y = 418+5
 Sealing area 10±3

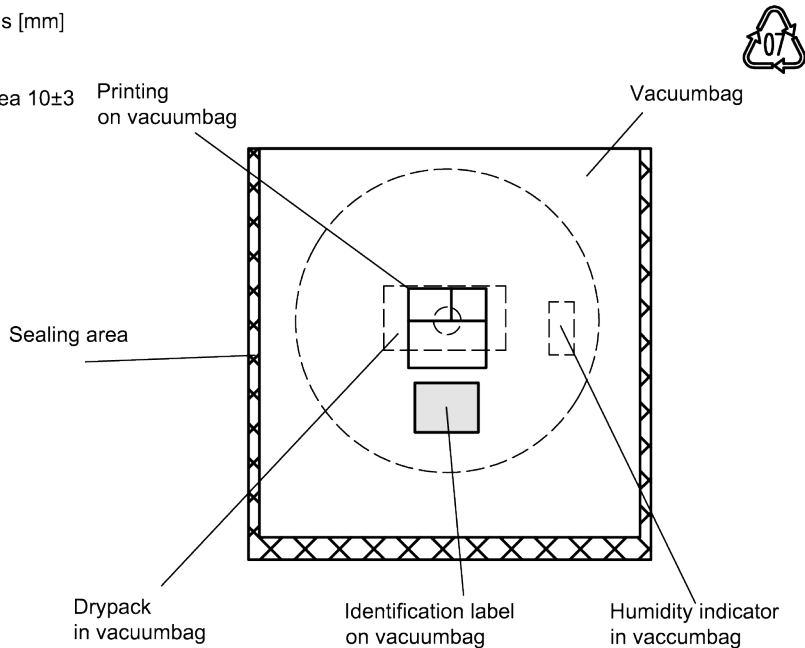


Figure 17: Drawing of moisture barrier bag (MBB) for reel with diameter of 330 mm.

Dimensions [mm]
 L = 335
 B = 338
 H = 36 (for 8 mm tape width)
 40 (for 12 mm tape width)
 Tolerance ±5

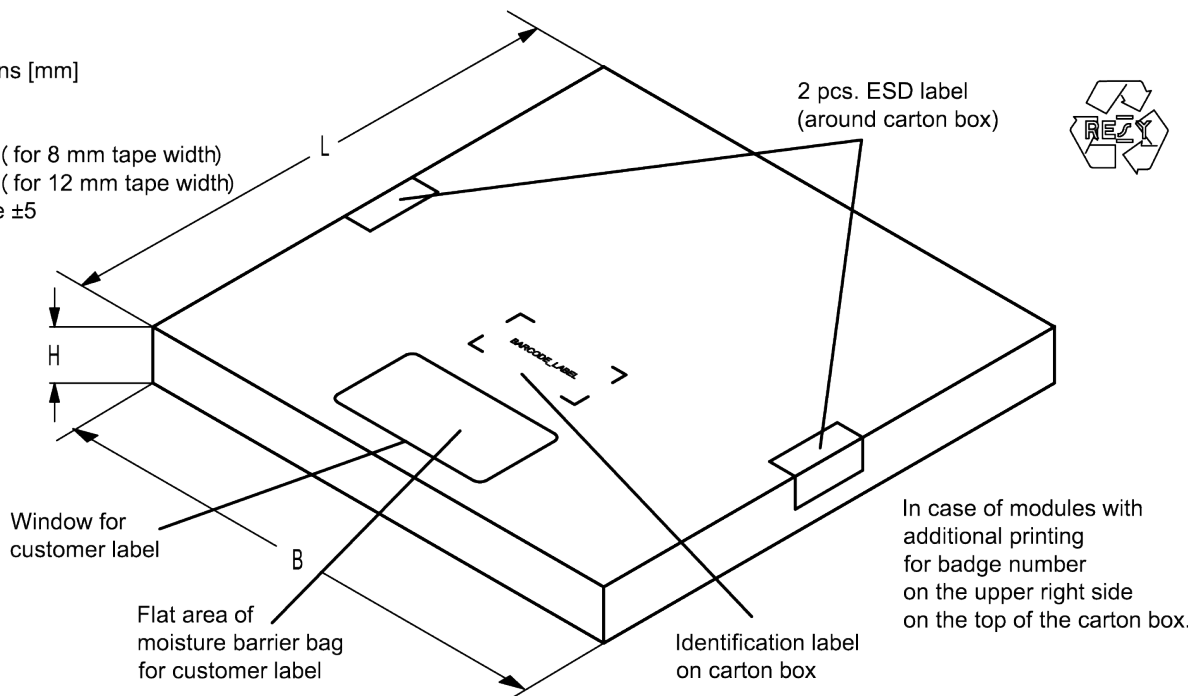


Figure 18: Drawing of folding box for reel with diameter of 330 mm.

SAW components

B8092

SAW duplexer

1950 / 2140 MHz

Data sheet

12 Marking

Products are marked with product type number and lot number encoded according to Table 2:

■ Type number:

The 4 digit type number of the ordering code, e.g., B3xxxxB**1234**xxxx,
is encoded by a special BASE32 code into a 3 digit marking.

| | | |
|---------------------|---|------------------|
| Example of decoding | type number marking on device | in decimal code. |
| | 16J | 1234 |
| | $1 \times 32^2 + 6 \times 32^1 + 18 (=J) \times 32^0$ | 1234 |

The BASE32 code for product type B8092 is 7WW.

■ Lot number:

The last 5 digits of the lot number, e.g., **12345**,
are encoded based on a special BASE47 code into a 3 digit marking.

| | | |
|--|---|------------------|
| Example of decoding lot number marking on device | | in decimal code. |
| | 5UY | 12345 |
| | $5 \times 47^2 + 27 (=U) \times 47^1 + 31 (=Y) \times 47^0$ | 12345 |

| Adopted BASE32 code for type number | | | |
|-------------------------------------|-------------|---------------|-------------|
| Decimal value | Base32 code | Decimal value | Base32 code |
| 0 | 0 | 16 | G |
| 1 | 1 | 17 | H |
| 2 | 2 | 18 | J |
| 3 | 3 | 19 | K |
| 4 | 4 | 20 | M |
| 5 | 5 | 21 | N |
| 6 | 6 | 22 | P |
| 7 | 7 | 23 | Q |
| 8 | 8 | 24 | R |
| 9 | 9 | 25 | S |
| 10 | A | 26 | T |
| 11 | B | 27 | V |
| 12 | C | 28 | W |
| 13 | D | 29 | X |
| 14 | E | 30 | Y |
| 15 | F | 31 | Z |

| Adopted BASE47 code for lot number | | | |
|------------------------------------|-------------|---------------|-------------|
| Decimal value | Base47 code | Decimal value | Base47 code |
| 0 | 0 | 24 | R |
| 1 | 1 | 25 | S |
| 2 | 2 | 26 | T |
| 3 | 3 | 27 | U |
| 4 | 4 | 28 | V |
| 5 | 5 | 29 | W |
| 6 | 6 | 30 | X |
| 7 | 7 | 31 | Y |
| 8 | 8 | 32 | Z |
| 9 | 9 | 33 | b |
| 10 | A | 34 | d |
| 11 | B | 35 | f |
| 12 | C | 36 | h |
| 13 | D | 37 | n |
| 14 | E | 38 | r |
| 15 | F | 39 | t |
| 16 | G | 40 | v |
| 17 | H | 41 | \ |
| 18 | J | 42 | ? |
| 19 | K | 43 | { |
| 20 | L | 44 | } |
| 21 | M | 45 | < |
| 22 | N | 46 | > |
| 23 | P | | |

Table 2: Lists for encoding and decoding of marking.

Data sheet

13 Soldering profile

The recommended soldering process is in accordance with IEC 60068-2-58 – 3rd edit and IPC/JEDEC J-STD-020B.

| | |
|--------------------------------------|--|
| ramp rate | ≤ 3 K/s |
| preheat | 125 °C to 220 °C, 150 s to 210 s, 0.4 K/s to 1.0 K/s |
| $T > 220$ °C | 30 s to 70 s |
| $T > 230$ °C | min. 10 s |
| $T > 245$ °C | max. 20 s |
| $T \geq 255$ °C | – |
| peak temperature T_{peak} | 250 °C +0/-5 °C |
| wetting temperature T_{min} | 230 °C +5/-0 °C for 10 s ± 1 s |
| cooling rate | ≤ 3 K/s |
| soldering temperature T | measured at solder pads |

Table 3: Characteristics of recommended soldering profile for lead-free solder (Sn95.5Ag3.8Cu0.7).

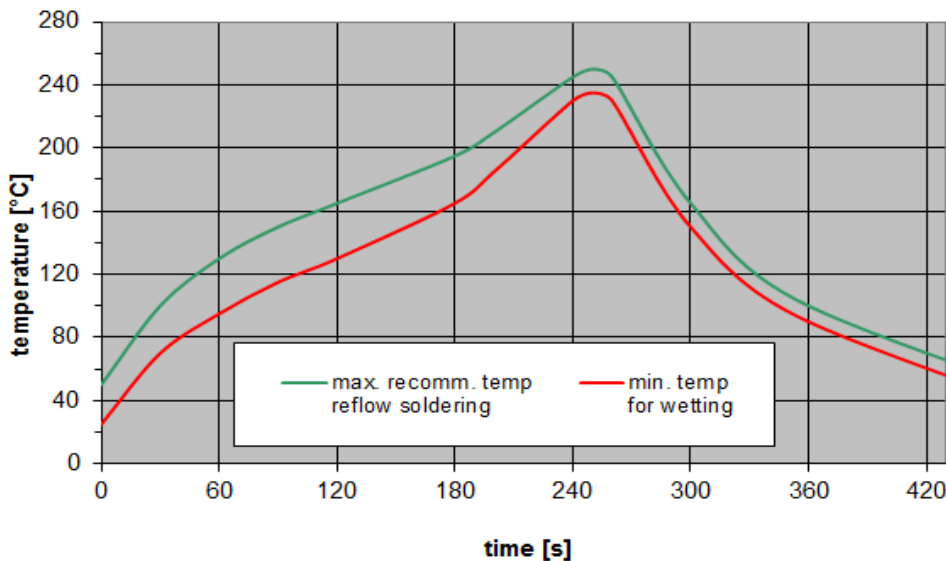


Figure 19: Recommended reflow profile for convection and infrared soldering – lead-free solder.

Data sheet

14 Annotations

14.1 Matching coils

See TDK inductor pdf-catalog <http://www.tdk.co.jp/tefe02/coil.htm#aname1> and Data Library for circuit simulation <http://www.tdk.co.jp/etvcl/index.htm>.

14.2 RoHS compatibility

ROHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.

14.3 Scattering parameters (S-parameters)

The pin/port assignment is available in the headers of the S-parameter files. Please contact your local RF360 sales office.

14.4 Ordering codes and packing units

| Ordering code | Packing unit |
|-----------------|--------------|
| B39212B8092P810 | 5000 pcs |

Table 4: Ordering codes and packing units.

Data sheet

15 Cautions and warnings

15.1 Display of ordering codes for RF360 products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications and the website of RF360, or in order-related documents such as shipping notes, order confirmations and product labels. The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products. Detailed information can be found on the Internet under www.rf360jv.com/orderingcodes.

15.2 Material information

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our sales offices.

For information on recycling of tapes and reels please contact one of our sales offices.

15.3 Moldability

Before using in overmolding environment, please contact your local RF360 sales office.

15.4 Package information

Landing area

The printed circuit board (PCB) land pattern (landing area) shown is based on RF360 internal development and empirical data and illustrated for example purposes, only. As customers' SMD assembly processes may have a plenty of variants and influence factors which are not under control or knowledge of RF360, additional careful process development on customer side is necessary and strongly recommended in order to achieve best soldering results tailored to the particular customer needs.

Dimensions

Unless otherwise specified all dimensions are understood using unit millimeter (mm).

Dimensions do not include burrs.

Projection method

Unless otherwise specified first-angle projection is applied.

Important notes

The following applies to all products named in this publication:

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- Поставка более 17-ти миллионов наименований электронных компонентов;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
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